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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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WOLF GREENFIELD & SACKS, PC
FEDERAL RESERVE PLAZA
600 ATLANTIC AVENUE
BOSTON, MA 02210-2211

EXAMINER	
ELLIS, SUEZU Y	

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/682,187	CAZAUX ET AL.	
	Examiner	Art Unit	
	Suezu Ellis	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *August 31, 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,15-17 and 20* is/are rejected.

7)☒ Claim(s) *2-4,8,14,18 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

RESPONSE TO AMENDMENT

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in France on October 16, 2002. It is noted, however, that applicant has not filed a certified copy of the 02/12851 application as required by 35 U.S.C. 119(b).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the control signal having an intermediate stage of zero slop during the transition (claims 8 and 19) must be shown or the feature canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional

replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1 and 6, it is unclear as to what an average slope is. What is the slope an average of? The slope at a first level and at a second level are both zero, so how can an average slope be calculated? What is the average based on? Perhaps applicant intends a predefined slope instead of a predefined average slope? Please clarify.

With respect to claim 7, applicant recites the control signal has a slope of non-zero finite slope between the second level and the first level. This is unclear. Does applicant mean the control signal transition has a slope or the signal itself? Please clarify. For examining purposes, the claim language will be interpreted as the control signal transition has a slope of non-zero finite slope.

Claims not specifically addressed are indefinite due to their dependency.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5-7, 10-12, 15, 16 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gowda et al. (US 5,898,168). Hereinafter, Gowda et al. will be referred to as Gowda.

Regarding claims 1, 6 and 7, 10-12, 16 and 20, Gowda discloses in Fig. 3B, an image cell comprising photodiodes that discharge into a read node via an NMOSFET (22). The image cell further comprises a signal (ROW SELECT) that switches the transistor off (first level – high potential) or switches the transistor on (second level – low potential) (col. 5, lines 13-44). Gowda further discloses the ROW SELECT signal changes from high (second level) to low (first level) when the photocharge from the photodiode is being collected after the photodiode has been reset. Fig. 5 illustrates a slope that occurs as the signal changes levels.

Regarding claims 5 and 15, Gowda discloses the signals are applied to rows or columns of pixels (col. 5, lines 14-17).

Claims 1, 5, 6, 10, 11 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiang (US 6,043,479).

With respect to claims 1, 6, 10 and 16, Chiang discloses in Fig. 5, a MOS active pixel sensor unit comprising a circuit (control circuit) having an NMOS transistor (T1) wherein a variable voltage source switches its voltage level in association with an on/off control of the transistor. When transistor is turned on when signal S1 is on a high voltage and the transistor is turned off when signal S1 is on a low voltage during certain time intervals (col. 4, lines 4-8, 19-23). Note, since the transistor has an on/off control, a control terminal is inherent. Further, with the signal S1 is on either a high or low voltage, a controlled transition is inherent. Fig. 6 illustrates the transition having a predefined slope between the first and second levels.

With respect to claim 5 and 15, Fig. 3 illustrates an image sensing device with a plurality of pixels.

With respect to claim 11, Chiang discloses a photodiode (Dp) generating a current.

With respect to claim 12, Chiang discloses the transition from the first voltage level to the second voltage level being substantially linear (even if infinite).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gowda.

Regarding claim 9, Gowda addresses all the limitations of claim 6. Gowda fails to disclose the duration of the transition of the control signal from the high level to the low level being greater than 50 ns. However, it would have been obvious to a person of ordinary skill in the art to modify the transition time to be greater than 50 ns since it has been held that discovering an optimum value of a

result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 7, 9, 13, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang.

With respect to claim 7 and 20, Chiang addresses all the limitations of claim 6. Fig. 6 illustrates a transition of infinite slope between the first and second levels. However, if the time when the voltage switches from the first and second level was not instantaneous (i.e. if there was a delay), then the transition would have a non-zero finite slope.

With respect to claims 9, 13 and 17, Chiang addresses all the limitations of claim 6, however fails to disclose the duration of the transition of the control signal from the high level to the low level being greater than 50 ns. However, it would have been obvious to a person of ordinary skill in the art to modify the transition time to be greater than 50 ns since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

Claims 2-4 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form and to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 14, 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, prior art fails to teach or reasonably suggest a MOS transistor of a first conductivity type connected to a voltage source at the second level and to a control line wherein the control line is connected to the gate of the transfer MOS transistor, and a MOS transistor of a second conductivity type connected to the control line and to a terminal of a constant current source wherein the other terminal of the constant current source is connected to a voltage source at the first level, in addition to the other limitations of the claim.

With respect to claims 8 and 19, prior art fails to teach or reasonably suggest the transition is controlled such that the signal has an intermediate stage of zero slop during the transition.

With respect to claim 14, prior art fails to teach or reasonably suggest a MOS transistor of a first conductivity type connected to a control terminal, a second MOS transistor of a second conductivity type connected to the control terminal and to a first terminal of a constant current source, a second terminal of the constant current source connected to a voltage source that provides the first voltage level, in addition to the other limitations of the claim.

With respect to claim 18, prior art fails to teach or reasonably suggest the transition being controlled according to a determined law.

Claims not specifically addressed would be allowable due to their dependency.

Response to Arguments

Applicant's arguments filed on August 31, 2005 have been fully considered but they are not persuasive.

With respect to claims 1 and 6, applicant argues that Gowda fails to disclose how the signal varies between the first and second level and that the linear representation is merely a drawing convention that simplifies illustrating a change in the level of a signal. Gowda fails to expressly disclose in the specification the change in the level is indeed linear, however Fig. 5 is part of the disclosure and as such, Fig. 5 illustrates this linear representation. Further, Fig. 5 seems to be equivalent to applicant's Fig. 8 by drawings alone. Applicant further argues Gowda fails to suggest a transition control signal having a predefined average slope. Since Fig. 5 discloses a linear slope between the first and second levels, Gowda teaches the control signal having a predefined slope. For these reasons discussed, the rejection of claims 1 and 6 are held valid.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Telephone/Fax Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suezu Ellis whose telephone number is 571-272-2868. The examiner can normally be reached on 8:30am-5pm (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephone B. Allen
Primary Examiner